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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,484	11/08/2001	Robert E. Thompson	W00512/70058 PCL	8415

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EXAMINER

RIVELL, JOHN A

ART UNIT PAPER NUMBER

3753

DATE MAILED: 05/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,484

Applicant(s)

THOMPSON ET AL.

Examiner

John Rivell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/26/04 (amend., Draw. figs. 11-13).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-25, 29-38, 42-47 and 50-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-25, 29-38, 42-47 and 50-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 1-22, 26-28, 39-41, 18 and 49 have been canceled. New claims 50-59 have been added. Thus claims 23-25, 29-38, 42-47 and 50-59 are pending.

The drawings, figures 11-13, were received on March 26, 2004. These drawings are acceptable and in conjunction with the originally filed figures 1-10, which were acceptable, all drawings are not acceptable.

Applicant's arguments with respect to claims 23-25, 29-38, 42-47 and 50-59 have been considered but are moot in view of the new ground(s) of rejection.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23-25, 31, 32, 42, 44-47, 50, 53, 54, 56, 58 and 59 are rejected under 35 U.S.C. §102 (b) as being anticipated by Evans.

The patent to Evans discloses "a media control valve (56), comprising: a body (valve body 88) having a media inlet (90) and a media outlet (fluidly connected to pipe line 52); a flow path within the body including the media inlet and the media outlet; an air-actuated (via air supplied to port 108 and or 108') closing member (94) positioned within the body (88) and constructed and arranged to provide all metering positions from a fully closed position to a fully open position" dependent on the value of fluid pressure supplied to port 108 and or 108'. The device of Evans is considered to "meter" fluid flow by reason of the continuous reference to "metering piston" and the discussion at column 10, lines 30-40 which discuss the employment, but not the illustration, of "devices for

regulating the introduction of air into the first inlet 'under' the drive piston and into the second inlet 'above' the drive piston". Clearly, by regulating the value of pressure supplied to both sides of a piston, its position is regulated. As the metering piston 94 is directly connected to the drive piston, the position of the metering piston is thus regulated. By regulating the position of the metering piston the flow of media through the valve is regulated or "metered".

Regarding claim 24, Evans discloses "a media control valve (56), comprising: a valve body (88) having a media inlet (90) and a media outlet (fluidly connected to pipe line 52), a plunger (94) positioned within the valve body (88); a sleeve (97) positioned within the valve body (88); a media opening (97A) in the sleeve (97), a housing (forming cylinder 104) connected to the valve body (88); a piston (10) positioned within the housing and connected to the plunger (94); and a base (92') connected to the valve body in communication with the media outlet; wherein the plunger, the piston, and the sleeve are constructed and arranged to provide all metering positions from a fully closed position to a fully open position" as set forth above, as recited.

Regarding claim 25, in Evans, "the base (92') comprises a unitary structure including a fluid passage (59) and an attachment mechanism (screws and holes therefore) adapted to attach the base (92') to the valve body (88)" as recited.

Regarding claim 31, in Evans, "at least one seal (such as at seal 96A is located) between the plunger (94) and the valve body (88) adapted to resist the passage of one of media, fluid, contaminants, and combinations thereof between the valve body and the housing" as recited.

Regarding claim 32, in Evans, "three seals (96A, 96C, 96D, in fig. 3B are) positioned between the plunger (94) and the valve body (88)" as recited.

Regarding claim 42, in Evans, "a valve seat" is read on the interior surface of sleeve 97 as recited.

Regarding claim 44, in Evans, "a gentle seal" is disclosed in that, as discussed in applicants specification, a "gentle seal" is one in which there are no sharp edges which, as disclosed for the prior art, lead to premature seal degradation between the head and seat. In Evans, there are no sharp edges between the cylindrical valve head 94 and the cylindrical seat surface inside of sleeve 97 which would lead to premature seal degradation. Thus a "gentle seal" is disclosed.

Regarding claim 45, Evans discloses "a media control system (see fig. 1) comprising: a media vessel (12); an air flow path (52); a media flow path (from vessel 12 to air path 52 through valve 56) including a media inlet (90) connected to the media vessel (12) and a media outlet (at 112, 114 in fig. 2) connected to the air flow path; and a media control valve (56) positioned on the media flow path; wherein the media control valve is air actuated (via air supplied at port 108 and/or 108') and is constructed and arranged to provide all metering positions from a fully closed position to a fully open position" as set forth above.

Regarding claim 46, in Evans, "the media flow path axis is substantially perpendicular with respect to a surface upon which the media control system rests" as exemplified in fig. 1, as recited.

Regarding claim 47, in Evans, "the media flow path axis (through valve 56) is substantially perpendicular to an axis of the air flow path (52)" as exemplified in fig. 1, as recited.

Regarding claim 50, in Evans "a piston (100, is shown) connected to the closing member (94)" as recited.

Regarding claim 53, in Evans, "a gentle seal" is exemplified by no sharp edges between the valve head 94 and interior sealing surface of sleeve 97, as recited.

Regarding claim 54, in Evans, "the flow path has a substantially linear axis" as recited.

Regarding claim 56, in Evans, "the media control valve (56) comprises a piston (100)" as recited.

Regarding claim 58, in Evans, "the media control valve (56) further comprises a gentle seal" as exemplified by no sharp edges between the valve head 94 and interior sealing surface of sleeve 97, as recited.

Regarding claim 59, in Evans, "the media flow path has a substantially linear axis" as recited.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 24, 25, 29, 31-38, 42, 44-47, 56 and 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shank, Jr. ('873) in view of Schmidt et al. or Evans.

Regarding claim 24, Shank, Jr. ('873) discloses "a media control valve, comprising: a valve body (40) having a media inlet and a media outlet; a plunger (45) positioned within the valve body; a sleeve (52) positioned within the body; a media opening (any one of openings 56) in the sleeve; a housing (forming cylinder 42) connected to the valve body (40); a piston (46) positioned within the housing and connected to the plunger; and a base (read at the conduit portion at reference numeral 40) connected to the valve body in communication with the media outlet" as recited.

Thus Shank, Jr. ('873) discloses all the claimed features with the exception of having "the plunger, the piston, and the sleeve (being) constructed and arranged to provide all metering positions from a fully closed position to a fully open position".

The patent to Schmidt et al. discloses that it is known in the art to employ a metering piston 65, metering media flow through the valve body for the purpose of regulating the flow of media through the valve.

The patent to Evans discloses that it is known in the art to employ a metering piston 94, operated by an air pressure responsive drive piston 100, in which the value of air pressure supplied to the piston can be regulated (column 10, lines 30-40 discuss the employment, but not the illustration, of "devices for regulating the introduction of air into the first inlet 'under' the drive piston and into the second inlet 'above' the drive piston". Clearly, by regulating the value of pressure supplied to both sides of a piston, its

position is regulated. As the metering piston 94 is directly connected to the drive piston, the position of the metering piston is regulated. By regulating the position of the metering piston the flow of media through the valve is regulated or “metered”) for the purpose of regulating the flow of media through the valve.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Shank, Jr. ('873) variability of the value of air pressure supplied to the air operator inlet at air inlet 50 for the purpose of regulating the flow of media through the valve by regulating the position of the valve relative to the seat as recognized by Schmidt et al. or Evans.

Regarding claim 25, Shank, Jr. ('873) discloses the claimed invention except for “the base... including... an attachment mechanism adapted to attach the base to the valve body”.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the “base” element and the valve body of Shank, Jr. ('873) from separate elements and then to attach them together, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179. Thus it would have been obvious to, for example, form the conduit section at reference numeral 40 from plural pieces.

Regarding claim 29, in Shank, Jr. ('873), “the media opening (56 has) a first portion proximate to the media outlet and a second portion distal to the media outlet, wherein the second portion is broader than the first portion”.

Shank, Jr. ('873) discloses such an “opening” in that, any one of the openings 56, when communicating with port 63, 61, include such a feature recited above as follows.

The bore of orifice 56 through sleeve 52 is not perpendicular to the longitudinal axis of sleeve 52. The sleeve 52 is hollow and cylindrical. As such the intersection of

the non perpendicular bore 56 with the cylindrical inner surface of sleeve 52 forms an ellipse having a longer major axis, here this axis extends parallel to the axis of sleeve 52 and a shorter minor axis, here extending into and out of the plane of the figure. Looking at this "opening" from the "media outlet" located at, for example, along a linear axis including the media inlet and media outlet, the "opening" at 56 presents a "first portion proximal (closest) to the media outlet" and is near the extreme left end of the major axis of the ellipse. At this location of the ellipse the cross section of the opening is small. The "second portion" is read at the minor axis of the ellipse, is located "distal to the media outlet" and includes a larger cross sectional flow path than the first portion.

Regarding claim 31, in Shank, Jr. ('873), "at least one seal (219 and/or 230 is) positioned between the plunger (45) and the valve body adapted to resist the passage of one of media, fluid, contaminants, and combinations thereof between the valve body and housing" as recited.

Regarding claims 32 and 33 Shank, Jr. ('873) discloses the claimed invention except for "three seals... constructed as a unitary piece".

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the "seal element" 219 and/or 230 of Shank, Jr. ('873) from plural separate seal elements and then to construct them unitarily, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Regarding claims 34 and 35, in Shank, Jr. ('873), the "housing (forming cylinder 42) comprises an exhaust chamber (48) including a vent" to which is attached a "filter" or muffler 71 (claim 35) as recited.

Regarding claim 36, Shank, Jr. ('873) discloses the claimed invention except for "filter" 71 of Shank, Jr. ('873) "adapted to filter particles greater than about 20 microns in diameter.

The recitation of "greater than about 20 microns in diameter" is clearly an obvious design expedient over the filter/muffler hole size as disclosed in Shank, Jr. ('873) which provide no new and/or unexpected results nor solves any stated problem with respect to the "filter" 71 of Shank, Jr. ('873). Moreover, it is believed readily apparent to those of ordinary skill in the art that the hole size of a filter element determines the particulate size filtered out of the flow of fluid.

Regarding claim 37, in Shank, Jr. ('873), the "valve body (40) and the housing (forming cylinder 42) comprise two distinct structures adapted to be joined together" by screws 53, 54 as recited.

Regarding claim 38, in Shank, Jr. ('873), clearly "the valve body and housing (comprise) a mating structure" as recited so as to be properly joined.

Regarding claim 42, in Shank, Jr. ('873), "a valve seat" is read on the interior surface of sleeve 52 mating with the exterior surface of valve stem 45 as shown in the closed position of figure 2.

Regarding claim 44, in Shank, Jr. ('873) the valve further includes "means providing a gentle seal" in that, as defined in applicants specification, there are no sharp edges of the valve stem 45 mating with the interior surface of sleeve 52 forming the valve sealing surfaces. When the valve of Shank, Jr. ('873) moves, the exterior surface of the stem 45 slides over the interior surface of the sleeve 52. As such there are no sharp edges which, as disclosed for the prior art, lead to premature seal degradation.

Regarding claim 45, Shank, Jr. ('873) discloses "a media control system comprising: a media vessel (24, fig. 1); an air flow path (at 43 in fig. 2); a media flow

path including a media inlet (61) connected to the media vessel and a media outlet (at reference numeral 42) connected to the air flow path (43, via port 79); and a media flow control valve (40) positioned on the media flow path" as recited.

The patent to Schmidt et al. discloses that it is known in the art to employ a metering piston 65, metering media flow through the valve body for the purpose of regulating the flow of media through the valve.

The patent to Evans discloses that it is known in the art to employ a metering piston 94, operated by an air pressure responsive drive piston 100, in which the value of air pressure supplied to the piston can be regulated (column 10, lines 30-40 discuss the employment, but not the illustration, of "devices for regulating the introduction of air into the first inlet 'under' the drive piston and into the second inlet 'above' the drive piston". Clearly, by regulating the value of pressure supplied to both sides of a piston, its position is regulated. As the metering piston 94 is directly connected to the drive piston, the position of the metering piston is regulated. By regulating the position of the metering piston the flow of media through the valve is regulated or "metered") for the purpose of regulating the flow of media through the valve.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Shank, Jr. ('873) variability of the value of air pressure supplied to the air operator inlet at air inlet 50 for the purpose of regulating the flow of media through the valve by regulating the position of the valve relative to the seat as recognized by Schmidt et al. or Evans.

Regarding claim 46, in Shank, Jr. ('873), "the media flow path axis (along the flow path from 61 to 63, 56, 42, 79) is substantially perpendicular with respect to a surface upon which the media control system rests" identified by the horizontal air flow path 43 as recited.

Regarding claim 47, in Shank, Jr. ('873), "the media flow path axis (along the flow path from 61 to 63, 56, 42, 79) is substantially perpendicular to an axis of the airflow path" 43 as recited.

Regarding claim 56, in Shank, Jr. ('873), "the media control valve comprises a piston" at piston 208 as recited.

Regarding claim 58, in Shank, Jr. ('873), "the media control valve further comprises a gentle seal" as noted above concerning claim 42.

Regarding claim 59, in Shank, Jr. ('873), "the media flow path has a substantially linear axis" as recited.

Claims 30, 51, 52, 55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shank, Jr. ('873) in view of Schmidt et al. or Evans as applied to claims 24, 25, 29, 31-38, 42, 44-47, 56 and 58-59 above, further in view of Bey.

The patent to Shank, Jr. ('873), as modified by Schmidt et al. or Evans, discloses all the claimed features with the exception of having a convex, in the direction of the valve body, contaminant isolation area on the side of piston 46 facing away from the media flow path.

The patent to Bey discloses that it is known in the art to employ a piston element 118 which includes a contaminant isolation region above the piston 118 which will contain and isolate leakage, from below, by the piston by collecting such leakage in the convex cutout region therein for the purpose of isolating leakage in the convex portion of the piston.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Shank, Jr. ('873), as modified by Schmidt et al. or Evans, a convex cutout portion in the piston 46 thereof for the purpose of isolating and containing contaminant leaked across the piston as recognized by Bey.

Regarding applicants remarks as they may apply, the allegation that applicant is unaware of any prior art which meets the claims as now amended is responded to by the application of the references to Shank, Jr. ('873) and Evans as specifically described above.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (703) 308-2599. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (703) 308-1272. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John Rivell
Primary Examiner
Art Unit 3753

j.r.